

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
31 December 2003 (31.12.2003)

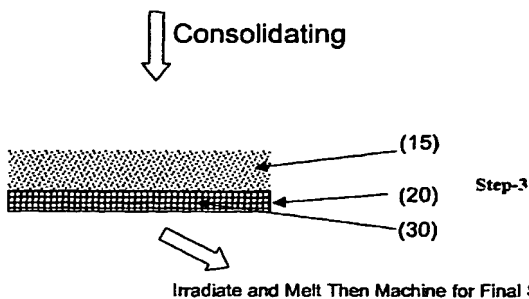
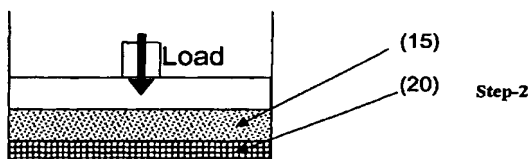
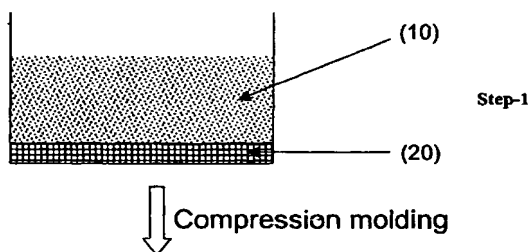
PCT

(10) International Publication Number
WO 2004/000159 A3

- (51) International Patent Classification⁷: **B29C 43/18**, 43/20, A61L 2/08, 9/22, 31/12
- (21) International Application Number: PCT/US2003/018053
- (22) International Filing Date: 10 June 2003 (10.06.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/390,120 21 June 2002 (21.06.2002) US
60/424,709 8 November 2002 (08.11.2002) US
- (71) Applicant (for all designated States except US): **MASSACHUSETTS GENERAL HOSPITAL** [US/US]; Thirteenth Street, Building 149, Suite 5036, Charlestown, MA 02129-2000 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **MURATOGLU, Orhun, K.** [TR/US]; 5 Dana Street, Cambridge, MA 02138 (US). **HARRIS, William, H.** [US/US]; 665 Concord Avenue, Belmont, MA 02178 (US).
- (74) Agents: **ISACSON, John, P.** et al.; **HELLER EHRMAN WHITE & MCAULIFFE LLP**, 1666 K Street, N.W., Suite 300, Washington, DC 20006-1228 (US).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),

[Continued on next page]

(54) Title: METAL BACK OR MESH CROSSLINKING



(57) Abstract: The present invention relates to medical implants that comprise crosslinked polyethylene (UHMWPE) (10) that is pressed into a consolidated form (15) in contact with another piece (such as a metallic mesh or back, a non-metallic mesh or back, a tibial tray, a patella tray, or an acetabular shell) (20) thereby forming an interface, and a hybrid component (30). Also disclosed herein are the methods of manufacturing and sterilizing such medical devices and materials used therein.



Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,
SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM,
GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(88) Date of publication of the international search report:
29 December 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/18053

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : B29C 43/18, 43/20; A61L 02/08, 9/22, 31/12

US CL : 264/112, 250, 273, 274, 319, 320; 526/352; 623/18.11,19.11,20.11,20.14,22.11,23.11; 128/898; 422/28

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 264/112, 250, 273, 274, 319, 320; 526/352; 623/18.11,19.11,20.11,20.14,22.11,23.11; 128/898; 422/28

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EAST and WEST

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,879,400 A (MERRILL et al.) 09 March 1999 (09.03.1999), column 3, lines 30-50, column 6, lines 40-45, claims 1-20.	1-185
Y	US 6,245,276 A (McNULTY et al.) 12 June 2001 (12.06.2001), see entire document.	1-185
Y,P	US 6,547,828 A (SCOTT et al.) 15 April 2003 (15.04.2003), see entire document.	1-185
Y,P	US 6,566,451 A (WANG et al.) 20 May 2003 (20.05.2003), see entire document.	1-185

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

07 October 2004 (07.10.2004)

Date of mailing of the international search report

18 OCT 2004

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US
Commissioner of Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Facsimile No. (703) 305-3230

Authorized officer

Angela Ortiz

Telephone No. 571-272-1700

J. Whitfield
for